Dr. Christoph Lackner

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Education

August 2019	***Doctor of Philosophy (Ph.D.) Electrical Engineering*** ***Rensselaer Polytechnic Institute***, Troy, NY Electric Power Systems Operation and Control
December 2016	***Master of Science (M.S.) Electrical Engineering*** ***Rensselaer Polytechnic Institute***, Troy, NY Electric Power Systems Operation and Control
May 2015	***Bachelor of Science (B.S.) Electrical Engineering*** ***Rensselaer Polytechnic Institute***, Troy, NY

Work Experience

Lead Engineer, **Chattanooga, TN** **Aug 2019**
GridProtectionAlliance

- Developed Trip Coil Energization Current Analysis tool for TVA
- Improved openXDA capabilities to model a related collection of transmission assets
- Developed openHistorian-based synchrophasor visualization systems
- Consulted and supported setup and installation of synchrophasor systems at multiple utilities

Owner and CEO, **Chattanooga, TN** **Aug 2019**
Lackner Consulting

- Provided consulting services to develop Promod Analysis Engine
- Provided software engineering services for various PJM and MISO market evaluation tools

Research Assistant, **Troy, NY** **May 2017 – Aug 2019**
NSF CURENT Engineering research Center

- Topology processing for phasor state estimation
- Frequency regulation control in WTG
- Power system stability with high renewable penetration
- Control system performance based on PMU data
- Equipment Health Evaluation using ambient and disturbance Synchrophasor Data

Research and Development Intern, **Albuquerque, NM** **May 2017 - Aug 2017**
Sandia National Laboratories

- Researched PMU measurement delays
- Developed a PMU latency measurement method
- Evaluated market performance of energy storage in electricity markets
- Supported economic feasibility studies on a battery energy storage system

Research and Development Intern, **Holyoke, MA** **May 2016 - Aug 2016**
ISO New England

- Supported phasor state estimation
- Developed additional phasor state estimator features
- Researched online digital PMU calibration
- Research Asset model correction based on ambient PMU data

Power Systems Modeling Intern, **Holyoke, MA** **May 2015 - Aug 2015**
ISO New England

- Developed EMS UI
- Developed EMS display control software
- Maintained custom EMS display development software
- Automated EMS display development

Electric Distribution Intern, **Reutte, Austria** **Jan 2014**
Ceratizit Austria

- Updated energy distribution schematics
- Maintained production equipment
- Conducted study for potential energy savings
- Developed energy savings plan according to EU regulations

Electrical Engineering Intern, **Towanda, PA** **May 2013 - Aug 2013**
Global Tungsten and Powders

- Completed an arc flash analysis on existing power distribution equipment
- Replaced old PLC system with new hardware
- Developed UI for process control
- Migration to new chemical flow control system
- Ongoing equipment maintenance and debugging

Awards and Honors

January 2020	**Nominated for HICCS Best Paper Award** **HICCS-53** Awarded for best paper at HICCS-53 ([3])
March 2019	**Grainger Power Engineering Scholars Award** Rensselaer Polytechnic Institute ECSE Grainger Foundation Awarded for outstanding research in the field of power and energy systems
August 2018	**Nominated for IEEE PES Best Paper Award** IEEE Power and Energy Society Awarded for best paper at IEEE PES ([7])
May 2015	**Henry J. Nolte Memorial Award** Rensselaer Polytechnic Institute ECSE, Awarded for outstanding engineering projects

Select Publications

C. Lackner, J. Chow, F. Wilches-Bernal and A. Darvishi, “Voltage Control Performance Evaluation Using Synchrophasor Data”, accepted for IEEE T&D, Chicago, IL, Apr. 2020

L. Lugani, D. Dotta, C. Lackner and J. Chow, „ARMAX-based method for inertial constant estimation of generation units using synchrophasors“, Electric Power Systems Research, vol. 1802020

[1] C. Lackner, J. Chow, F. Wilches-Bernal and A. Darvishi, " Voltage Control Performance Evaluation Using Synchrophasor Data", HICCS-53, 2020

[2] C. Lackner, J. Chow and F. Wilches-Bernal " Performance evaluation of STATCOM equipment using ambient and disturbance data", POWERTEC, Milan, IT, 2020

[3] K. Kirihara, J. Yamazaki, P. Chongfuangprinya, S. Konstantinopoulos, C. Lackner, J. H. Chow, S. Maslennikov, Y. Liu " Speeding Up the Dissipating Energy Flow Based Oscillation Source Detection", SGSMA, College Station, TX, 2019

[4] F. Wilches-Bernal, C. Lackner, J. H. Chow, J. J. Sanchez-Gasca, "Effects of Wind Turbine Generators on Inter-Area Oscillations and Damping Control Design", HICCS, 2019

[5] C. Lackner, J. Chow, F. Wilches-Bernal, "Estimation of Generator Control System Performance using Synchrophasor Data", XIV Sepope, Recive, BR, 2018

[6] K. Kiarahara, S. Konstantinopoulos, C.Lackner, H. Hooshyar, L. Vanfretti and J. Chow, "Forced Oscillation Detection and Localization", WECC JSIS Working Group Meeting, 2018

[6] C.Lackner, F. Wilches-Bernal, B. Pierre, D. Schoenwald, "Real Time Tool To Characterize Power System Communication Delays", IEEE PES General Meeting, Portland, OR, 2018

[7] C.Lackner, F. Wilches-Bernal, J. Chow, "Effects of Wind Generation Integration on Power System Transient Stability", IEEE PES General Meeting, Portland, OR, 2018

[8] C.Lackner, F. Wilches-Bernal, J. Chow, "Generator Control System Performance Monitoring using PMU Measurements", NASPI Working Group Meeting, Albuquerque, NM, 2018

[9] C.Lackner, F. Wilches-Bernal, B. Pierre, D. Schoenwald, "A Tool to Characterize Power System Communication Networks with Synchrophasor Data", IEEE Power and Energy technology Systems Journal, 2018

[10] C.Lackner, T. Nguyen, R. Byrne, F. Wiegandt, "Energy Storage Participation in the German Secondary Regulation Market", IEEE T&D , Denver, CO, 2018

[11] C.Lackner, T. Nguyen, R. Byrne, "Economic Feasibility of Battery based Energy Storage Projects in the German Secondary Regulation Market", EESAT, San Diego, CA, 2017

[12] C. Lackner, J. Chow, "Wide-Area Generation Control between Control Regions with High Renewable Penetration", IREP, Porto, Portugal, 2017

[13] C. Lackner, S. Maslennikov, "Online PMU Calibration and Line Parameter Estimation", IEEE PES General Meeting, Chicago, IL, 2017

[14] C. Lackner, Q. Zhang, J. H. Chow, "Real-Time Phasor-Only State Estimation with Topology Processing as OpenPDC Adapter", IEEE PES General Meeting, Chicago, IL, 2017

[15] C. Lackner, "Real Time Implementation of Phasor Only State Estimation with Topology Processing", Rensselaer polytechnic Institute, ECSE, M.S. Thesis, Troy, NY, 2016

[16] F. Wilches-Bernal, C. Lackner, and J. H. Chow, “Power System Controllability through Nontraditional Generation”, 55th IEEE Conference on Decision and Control , Las Vegas, NV, 2016

[17] C. Lackner, E. Fernandes, J.H. Chow, S. G. Ghiocel, “Real-Time Phasor-only State Estimator Applied to New England and New York Power Systems”, NASPI International Synchrophasor Symposium, Atlanta, GA, 2016

[18] F. Wilches-Bernal, C. Lackner, J. H. Chow, “Effects of Wind Turbine Generators on the Stability of the Local Mode of a Single Machine System”, Proceedings of Power Engineering Conference Illinois (PECI), 2016.